CLAIMS

What is claimed is:

1. An active pixel sensor circuit comprising:

a photodetector;

an access transistor connected to the photodetector;

an amplifier transistor connected to an output of the access transistor and to a signal output bus; and

a reset transistor connected between the access transistor and the amplifier transistor, wherein the reset transistor is reset with a tapered reset signal.

2. The circuit of Claim 1, wherein the transistors are MOSFETs of identical polarity.

3. The circuit of Claim 2, further comprising a first column buffer connected to the reset and amplifier transistors.

4. The circuit of Claim 3, further comprising a second column buffer connected to signal output bus.

5. The circuit of Claim 4, further comprising a row disable transistor connected to the reset transistor.

6. The circuit of Claim 5, wherein the first column buffer, second column buffer and row disable transistor are connected to a plurality of active pixel sensor circuits.

7. The circuit of Claim 6, wherein the amplifier transistor operates as a driver of a source follower amplifier when a signal from the photodetector is being read out on a row-by-row basis, and operates as a driver of a reset amplifier when the photodetector is being reset.

8. An active pixel sensor circuit comprising:

photodetector means for converting light into an electrical signal;

amplifier means for amplifying the electrical signal;

access means for transferring the electrical signal from the photodetector means to the amplifier means;

reset means for resetting the photodetector; and

tapered reset signal means for applying a tapered reset signal to the reset means.

9. A method for low noise image formation in an active pixel sensor, the method comprising:

reading a signal on a photodetector;

transferring the signal from the photodetector to an amplifier;

reading out the signal from the amplifier to a bus; and

applying a tapered clock signal to a reset transistor in order to reset the photodetector.

10. A CMOS imager array comprising a plurality of pixels, each pixel comprising:

a photodetector;

an access MOSFET having a source connected to the photodetector;

an amplifier MOSFET having a gate connected to a drain of the access MOSFET, a source connected to a signal bus, and a drain connected to a column buffer; and

a reset MOSFET having a source connected to the drain of the access MOSFET, a drain connected to a column buffer, and a gate connected to a tapered reset signal generator.

11. The imager array of Claim 10, further comprising a row disable MOSFET having a source connected to the drain of the reset MOSFET and a drain connected to a row disable signal generator.

12. The imager array of Claim 11, further comprising an access signal generator connected to the gate of the access MOSFET.

13. The imager array of Claim 12, further comprising a column buffer connected to the signal bus.

14. The imager array of Claim 13, wherein the MOSFETs within each pixel are of identical polarity.

15. The imager array of Claim 14, wherein the photodetector comprises a substrate diode with the silicide cleared.